AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A lipopeptide comprising a polypeptide conjugated to one or more lipid moieties wherein:

(i) said polypeptide comprises an amino acid sequence that comprises:

(a) an ~~the~~ amino acid sequence of a T helper cell (Th) epitope and an ~~the~~ amino acid sequence of a B cell epitope, wherein said amino acid sequences are different; and

(b) one or more internal lysine residues or internal lysine analog residues for covalent attachment of each of said lipid moieties via an ~~the~~ epsilon-amino group or terminal side-chain group of said lysine or lysine analog; and

(ii) each of said one or more lipid moieties is covalently attached to the ~~an~~ epsilon-amino group of said one or more internal lysine residues or to the ~~an~~ terminal side-chain group of said one or more internal lysine analog residues.

2. **(Original)** The lipopeptide of claim 1 wherein the lipid is attached to the epsilon-amino group of a lysine residue.

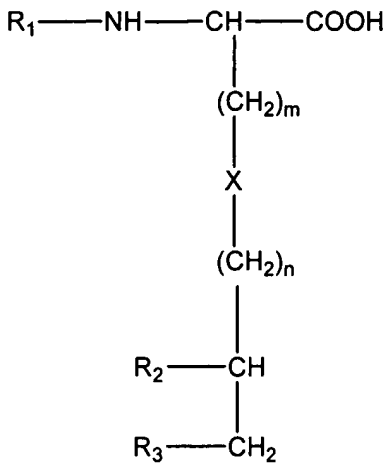
3. **(Currently amended)** The lipopeptide of claim 1 ~~or 2~~ wherein the internal lysine residue to which the ~~a~~ lipid moiety is attached is positioned between the Th epitope and the B cell epitope.

4. **(Currently amended)** The lipopeptide of claim 1 ~~or 2~~ wherein the internal lysine residue to which ~~a~~ the lipid moiety is attached is positioned within the Th epitope.

5. **(Currently amended)** The lipopeptide of claim 1 ~~or 2~~ comprising two lipid moieties.

6. **(Currently amended)** The lipopeptide of claim 5 wherein ~~an~~ a first internal lysine residue to which a first lipid moiety is attached is positioned between the Th epitope and the B cell epitope and ~~an~~ a second internal lysine residue to which a second lipid moiety is attached is positioned within the Th epitope.

7. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 6~~ of claim 1 wherein the lipid moiety has a structure of General Formula (VII):



wherein:

(i) X is selected from the group consisting of sulfur, oxygen, disulfide (-S-S-), and methylene (-CH_2-), and amino (-NH-);

(ii) m is an integer being 1 or 2;

(iii) n is an integer from 0 to 5;

(iv) R_1 is selected from the group consisting of hydrogen, carbonyl (-CO-), and R'-CO- wherein R' is selected from the group consisting of alkyl having 7 to 25 carbon atoms, alkenyl having 7 to 25 carbon atoms, and alkynyl having 7 to 25 carbon atoms, wherein said alkyl, alkenyl or alkynyl group is optionally substituted by a hydroxyl, amino, oxo, acyl, or cycloalkyl group;

(v) R_2 is selected from the group consisting of R'-CO-O-, R'-O-, R'-O-CO-, R'-NH-CO-, and R'-CO-NH-, wherein R' is selected from the group consisting of alkyl having 7 to 25 carbon atoms, alkenyl having 7 to 25 carbon atoms, and alkynyl having 7 to 25 carbon atoms, wherein said alkyl, alkenyl or alkynyl group is optionally substituted by a hydroxyl, amino, oxo, acyl, or cycloalkyl group; and

(vi) R_3 is selected from the group consisting of R'-CO-O-, R'-O-, R'-O-CO-, R'-NH-CO-, and R'-CO-NH-, wherein R' is selected from the group consisting of alkyl having 7 to 25 carbon atoms, alkenyl having 7 to 25 carbon atoms, and alkynyl having 7 to 25 carbon atoms, wherein said alkyl, alkenyl or alkynyl group is optionally substituted by a hydroxyl, amino, oxo, acyl, or cycloalkyl group

and wherein each of R_1, R_2 and R_3 are the same or different.

8. **(Original)** The lipopeptide of claim 7 wherein X is sulfur; m and n are both 1; R_1 is selected from the group consisting of hydrogen, and R'-CO-, wherein R' is an alkyl group having 7 to 25 carbon atoms; and R_2 and R_3 are selected from the group consisting of R'-CO-O-, R'-O-, R'-O-CO-, R'-NH-CO-, and R'-CO-NH-, wherein R' is an alkyl group having 7 to 25 carbon atoms.

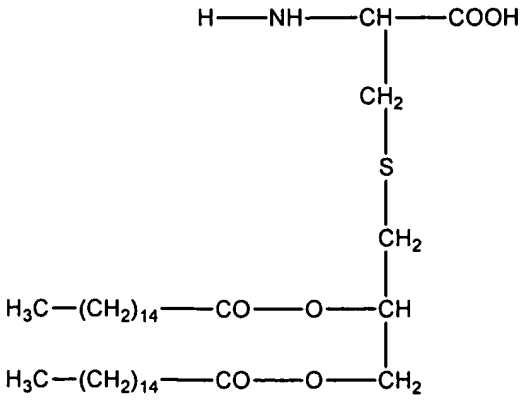
9. **(Original)** The lipopeptide of claim 8 wherein R' is selected from the group consisting of: palmitoyl, myristoyl, stearoyl, lauroyl, octanoyl, and decanoyl.

10. **(Original)** The lipopeptide of claim 9 wherein R' is selected from the group consisting of: palmitoyl, stearoyl, lauroyl, and octanoyl, and decanoyl.

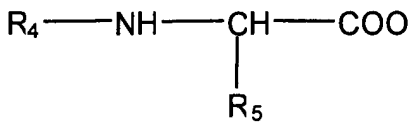
11. **(Currently amended)** The lipopeptide ~~according to any one of claims 7 to 10~~ of claim 7 wherein the lipid is contained within a lipoamino acid moiety selected from the group consisting of: Pam_2Cys, Pam_3Cys, Ste_2Cys, Lau_2Cys, and Oct_2Cys.

12. **(Original)** The lipopeptide according to claim 11 wherein the lipoamino acid moiety is selected from the group consisting of Pam_2Cys, Ste_2Cys, Lau_2Cys, and Oct_2Cys.

13. **(Original)** The lipopeptide according to claim 11 wherein the lipoamino acid moiety has the structure of Formula (II):



14. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 6~~ of claim 1 wherein the lipid moiety has the following General Formula (VIII):



wherein:

(i) R_4 is selected from the group consisting of: (i) an alpha-acyl-fatty acid residue consisting of between about 7 and about 25 carbon atoms; (ii) an alpha-alkyl-beta-hydroxy-fatty acid residue; (iii) a beta-hydroxy ester of an alpha-alkyl-beta-hydroxy-fatty acid residue; and (iv) a lipoamino acid residue; and

(ii) R_5 is hydrogen or the side chain of an amino acid residue.

15. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 14~~ of claim 1 wherein ~~the~~ a lipid of the lipopeptide moiety is separated from ~~the~~ a peptide moiety of the lipopeptide by a spacer.

16. **(Original)** The lipopeptide of claim 15 wherein the spacer comprises arginine, serine or 6-aminohexanoic acid.

17. **(Currently amended)** The lipopeptide of claim 15 ~~or 16~~ wherein the spacer consists of a serine homodimer.

18. **(Currently amended)** The lipopeptide of claim 15 ~~or 16~~ wherein the spacer consists of an arginine homodimer.

20. **(Currently amended)** The lipopeptide of claim 15 ~~or 16~~ wherein the spacer consists of 6-aminohexanoic acid.

21. **(Currently amended)** The lipopeptide ~~accord to any one of claims 1 to 20~~ of claim 1 wherein the internal lysine or internal lysine analog is nested within a synthetic amino acid sequence having low immunogenicity.

22. **(Currently amended)** The lipopeptide according ~~to any one of claims 1 to 21~~ of claim 1 wherein the T-helper epitope is a T-helper epitope of influenza virus haemagglutinin or a T-helper epitope of canine distemper virus F (CDV-F) protein.

23. **(Currently amended)** The lipopeptide of claim 22 wherein the ~~a~~ the T-helper epitope of influenza virus haemagglutinin comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 18.

24. **(Currently amended)** The lipopeptide of claim 23 wherein the ~~a~~ T-helper epitope of influenza virus haemagglutinin comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 1.

25. **(Currently amended)** The lipopeptide of claim 22 wherein the T-helper epitope of CDV-F protein comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 24.

26. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 25~~ of claim 1 wherein the B cell epitope is from an immunogenic protein, lipoprotein, or glycoprotein of a virus.

27. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 25~~ of claim 1 wherein the B cell epitope is from an immunogenic protein, lipoprotein, or glycoprotein of a prokaryotic organism.

28. **(Original)** The lipopeptide according to claim 27 wherein the B cell epitope is from the M protein of Group A streptococcus.

29. **(Currently amended)** The lipopeptide of claim 28 wherein the B cell epitope comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 101.

30. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 25~~ of claim 1 wherein the B cell epitope is from an immunogenic protein, lipoprotein, or glycoprotein of a eukaryotic organism.

31. **(Original)** The lipopeptide according to claim 30 wherein the eukaryotic organism is a parasite.

32. **(Original)** The lipopeptide according to claim 30 wherein the eukaryotic organism is a mammal.

33. **(Currently amended)** The lipopeptide according to claim 32 wherein the B cell epitope is from a peptide hormone of ~~a~~ the mammal.

34. **(Original)** The lipopeptide according to claim 33 wherein the peptide hormone is a digestive hormone or a reproductive peptide hormone.

35. **(Original)** The lipopeptide according to claim 34 wherein the digestive hormone is gastrin or pentagastrin.

36. **(Currently amended)** The lipopeptide according to claim 35 comprising ~~the~~ an amino acid sequence set forth in SEQ ID NO: 102 or SEQ ID NO: 113.

37. **(Original)** The lipopeptide according to claim 34 wherein the reproductive hormone is luteinising hormone-releasing hormone (LHRH) or a fragment thereof.

38. **(Currently amended)** The lipopeptide according to ~~claim 31~~ of claim 37 comprising the amino acid sequence set forth in SEQ ID NO: 2 or SEQ ID NO: 3 or SEQ ID NO: 4.

39. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 38~~ of claim 1 wherein the polypeptide comprises an amino acid sequence selected from the group consisting of:

~~a polypeptide comprising an amino acid sequence selected from the group consisting of:~~

(i) GALNNRFQIKGVELKSEHWSYGLRPG (SEQ ID NO: 5);

(ii) GALNNRFQIKGVELKSKEHWSYGLRPG (SEQ ID NO: 7);

(iii) KLIPNASLIENCTKAELKHWSYGLRPG (SEQ ID NO: 9);

(iv) KLIPNASLIENCTKAELKGLRPG (SEQ ID NO: 13);

(v) KLIPNASLIENCTKAELHWSYGLRPG (SEQ ID NO: 103);

(vi) KLIPNASLIENCTKAELGLRPG (SEQ ID NO: 104);

(vii) KLIPNASLIENCTKAELKQAEDKVKASREAKKQVEKALEQLEDKVK (SEQ ID NO: 105);

(viii) KLIPNASLIENCTKAELKKQAEDKVKASREAKKQVEKALEQLEDKVK (SEQ ID NO: 106);

(ix) GALNNRFQIKGVELKSKQAEDKVKASREAKKQVEKALEQLEDKVK (SEQ ID NO: 107);

(x) GALNNRFQIKGVELKSKKQAEDKVKASREAKKQVEKALEQLEDKVK (SEQ ID NO: 108);

(xi) KLIPNASLIENCTKAELGWMDF (SEQ ID NO: 109);

(xii) KLIPNASLIENCTKAELKGWMDF (SEQ ID NO: 110);

(xiii) GALNNRFQIKGVELKSGWMDF (SEQ ID NO: 111); and

(xiv) GALNNRFQIKGVELKSKGWMDF (SEQ ID NO: 112).

40. **(Currently amended)** The lipopeptide ~~according to any one of claims 1 to 39~~ of claim 1 capable of upregulating ~~the~~ surface expression of at least an MHC class II molecule~~s~~ on immature dendritic cells (DC).

41. **(Original)** The lipopeptide of claim 40 wherein the DC are D1 cells.

42. **(Currently amended)** A lipopeptide comprising a polypeptide conjugated to one or more lipid moieties wherein:

(i) said polypeptide comprises an amino acid sequence that comprises:

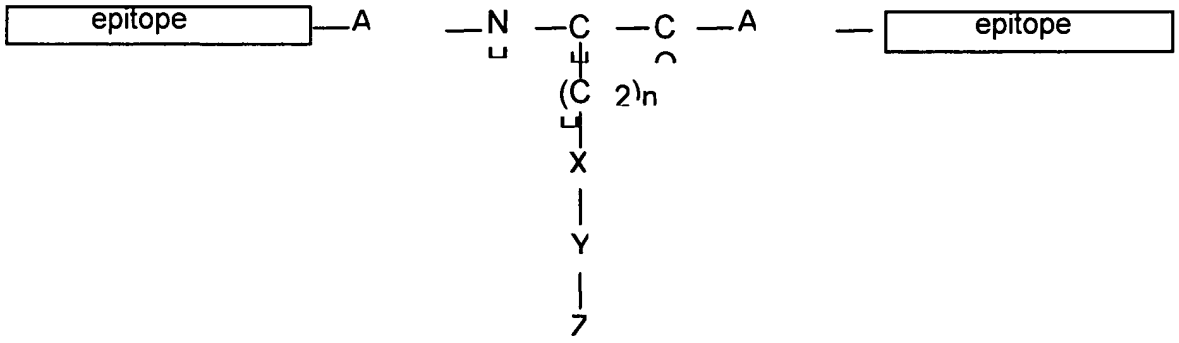
(a) ~~the~~ an amino acid sequence of a T helper cell (Th) epitope and ~~the~~ an amino acid sequence of a B cell epitope, wherein said amino acid sequences are different; and

(b) one or more internal lysine residues for covalent attachment of each of said lipid moieties via ~~the~~ an epsilon-amino group of said one or more lysine residues;

(ii) each of said one or more lipid moieties is covalently attached to ~~an~~ the epsilon-amino group of said one or more internal lysine residues; and

(iii) said lipopeptide has the general Formula (VI):

Formula (VI):



wherein:

epitope is ~~a~~ the T-helper epitope or B-cell epitope;

A is either present or absent and consists of an amino acid spacer of about 1 to about 6 amino acids in length;

n is an integer having a value of 1, 2, 3, or 4;

X is a terminal side-chain group selected from the group consisting of NH, O and S;

Y is either present of absent and consists of a spacer of about 1 to about 6 amino acids in length, wherein said spacer comprises arginine, serine or 6-aminohexanoic acid; and

Z is a lipoamino acid moiety selected from the group consisting of Pam_2Cys, Pam_3Cys, Ste_2Cys, Lau_2Cys, and Oct_2Cys.

43. **(Original)** The lipopeptide of claim 42 wherein A is absent.

44. **(Original)** The lipopeptide of claim 43 wherein the B cell epitope comprises the amino acid sequence set forth in SEQ ID NO: 2 or SEQ ID NO: 3 or SEQ ID NO: 4.

45. **(Original)** The lipopeptide of claim 43 wherein: (i) the B cell epitope comprises the amino acid sequence set forth in SEQ ID NO: 101; (ii) Y is present and consists of a serine homodimer; and (iii) Z consists of Pam_2Cys.

46. **(Currently amended)** The lipopeptide of claim 45 wherein the T helper epitope comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 24 and wherein ~~a~~ the lipid moiety is attached to the polypeptide via the epsilon-amino group of a lysine residue within SEQ ID NO: 24.

47. **(Original)** The lipopeptide of claim 45 wherein the lipid moiety is attached to the polypeptide via Lys-14 of SEQ ID NO: 24.

48. **(Original)** The lipopeptide of claim 43 wherein: (i) the B cell epitope comprises the amino acid sequence set forth in SEQ ID NO: 102; (ii) Y is present and consists of a serine homodimer; and (iii) Z consists of Pam_2Cys.

49. **(Currently amended)** The lipopeptide ~~according to any one of claims 42 to 48~~ of claim 42 capable of upregulating ~~the~~ surface expression of at least one MHC class II molecules on immature dendritic cells (DC).

50. **(Original)** The lipopeptide of claim 49 wherein the DC are D1 cells.

51. **(Currently amended)** A method of producing a lipopeptide comprising:

(i) producing a polypeptide comprising an amino acid sequence that comprises:

(a) ~~the~~ an amino acid sequence of a T helper cell (Th) epitope and ~~the~~ an amino acid sequence of a B cell epitope, wherein said amino acid sequences are different; and

(b) one or more internal lysine residues or internal lysine analog residues; and

(ii) covalently attaching each of ~~said~~ one or more lipid moieties directly or indirectly to an epsilon-amino group of said one or more internal lysine residues or to ~~the~~ a terminal side-chain group of said one or more internal lysine analog residues so as to produce a lipopeptide having the lipid moiety attached to the epsilon amino group of said internal lysine residue or having the lipid moiety attached to the terminal side-chain group of said internal lysine analog residue.

52. **(Original)** The method of claim 51 wherein the polypeptide is synthesized by a chemical synthesis means.

53. **(Currently amended)** The method of claim 51 ~~or 52~~ further comprising producing the lipid moiety.

54. **(Original)** The method of claim 53 comprising synthesizing the lipid moiety as a lipoamino acid.

55. **(Currently amended)** The method according to claim 54 further comprising adding a spacer to ~~the~~ an amino acid moiety of the lipoamino acid.

56. **(Currently amended)** The method according to claim 55 wherein the lipid comprises an arginine homodimer or a serine homodimer or a 6-aminohexanoic acid .

57. **(Currently amended)** The method of claim 55 ~~or 56~~ comprising adding the spacer to the lipoamino acid via ~~the~~ a terminal carboxy group in a process that comprises performing a condensation, addition, substitution, or oxidation reaction.

58. **(Currently amended)** The method ~~according to any one of claims 55 to 57~~ of claim 55 wherein the spacer comprises a terminal protected amino acid residue to facilitate conjugation of the lipoamino acid to ~~a~~ the polypeptide.

59. **(Currently amended)** The method of claim 58 ~~further~~ comprising de-protecting the terminal protected amino acid of the spacer and conjugating the lipoamino acid to ~~a~~ the polypeptide.

60. **(Original)** The method of claim 54 comprising adding a spacer to a non-modified epsilon amino group of the polypeptide in a process comprising performing a nucleophilic substitution reaction.

61. **(Original)** The method of claim 60 wherein the polypeptide has an amino acid sequence comprising a single internal lysine or lysine analog residue and a blocked N-terminus.

62. **(Currently amended)** The method according to claim 60 ~~or 61~~ wherein the lipid comprises an arginine homodimer or serine homodimer or 6-aminohexanoic acid .

63. **(Currently amended)** A composition comprising the lipopeptide ~~according to any one of claims 1 to 50~~ of claim 1 and a pharmaceutically acceptable excipient or diluent.

64. **(Original)** The composition of claim 63 further comprising a biologic response modifier (BRM).

65. **(Currently amended)** A method of eliciting the production of antibody against an antigenic B cell epitope in a subject comprising administering the lipopeptide ~~according to any one of claims 1 to 50 or the composition of claim 63 or 64~~ of claim 1 to said subject for a time and under conditions sufficient to elicit the production of antibodies against said antigenic B cell epitope.

66. **(Original)** The method according to claim 65 wherein the lipopeptide is administered intranasally to the subject.

67. **(Original)** The method according to claim 66 wherein the lipopeptide is administered to the subject by injection.

68. **(Currently amended)** The method according to ~~any one of claims 65 to 67~~ claim 65 comprising eliciting the production of high titer antibodies.

69. **(Currently amended)** The method according to ~~any one of claims 65 to 68~~ claim 65 wherein the antigenic B cell epitope is from a pathogen and wherein said method comprises generating neutralizing antibodies against the pathogen.

70. **(Currently amended)** The method according to ~~any one of claims 65 to 69~~ claim 65 further comprising producing a monoclonal antibody against the antigenic B cell epitope.

71. **(Original)** A method of inducing infertility in a subject comprising administering to said subject a lipopeptide comprising a polypeptide conjugated to one or more lipid moieties, wherein:

(i) said polypeptide comprises:

(a) the amino acid sequence of a T helper cell (Th) epitope and the amino acid sequence of a B cell epitope of a reproductive hormone or hormone receptor, and wherein said amino acid sequences are different;

(b) one or more internal lysine residues or internal lysine analog residues for covalent attachment of each of said lipid moieties via an epsilon-amino group of said internal lysine or via a terminal side-chain group of said internal lysine analog; and

(c) each of said one or more lipid moieties is covalently attached directly or indirectly to an epsilon-amino group of said one or more internal lysine residues or to a terminal side-chain group of said one or more internal lysine analog residues; and

(ii) said lipopeptide is administered for a time and under conditions sufficient to elicit a humoral immune response against said antigenic B cell epitope.

72. **(Original)** The method of claim 71 wherein the lipopeptide is administered in combination with a pharmaceutically acceptable excipient or diluent.

73. **(Currently amended)** The method of claim 71 ~~or 72~~ wherein a secondary immune response is generated against the B cell epitope sufficient to prevent oogenesis, spermatogenesis, fertilization, implantation, or embryo development in the subject.

74. **(Currently amended)** The method according to ~~any one of claims 71 to 73~~ claim 71 wherein antibody levels are sustained for at least a single reproductive cycle of an immunized female subject.

75. **(Currently amended)** The method according to ~~any one of claims 71 to 74~~ claim 71 wherein the B cell epitope is derived from the amino acid sequence of luteinising hormone-releasing hormone (LHRH).

76. **(Currently amended)** The method of claim 75 wherein the B cell epitope comprises ~~the~~ an amino acid sequence set forth in SEQ ID NO: 2 or SEQ ID NO: 3 or SEQ ID NO: 4.

77. **(Currently amended)** The method according to ~~any one of claims 71 to 76~~ claim 71 wherein the T-helper epitope comprises an amino acid sequence as set forth in SEQ ID NO: 1 or SEQ ID NO: 24.

78. **(Currently amended)** The method according to ~~any one of claims 71 to 77~~ claim 71 wherein the lipid moiety comprises a lipoamino acid selected from the group consisting of: (i) Pam_2Cys; (ii) Ste_2Cys; (iii) Lau_2Cys; and (iv) Oct_2Cys.

79. **(Currently amended)** The method according to ~~any one of claims 71 to 78~~ claim 71 further comprising producing the lipopeptide.

80. **(Currently amended)** The method according to ~~any one of claims 71 to 79~~ claim 71 further comprising determining the antibody level in a sample taken previously from the subject.

81. **(Currently amended)** The method according to ~~any one of claims 71 to 80~~ claim 71 further comprising determining the fecundity of the subject.

82. **(Currently amended)** A contraceptive agent comprising the lipopeptide ~~according to any one of claims 1 to 50~~ of claim 1 wherein the B cell epitope is from a reproductive hormone or hormone receptor.

83. **(Original)** A contraceptive agent comprising the lipopeptide according to claim 44.

84. **(Original)** Use of the lipopeptide according to claim 44 in the preparation of a contraceptive reagent for reducing fertility in an animal subject.

85. **(Original)** A method of inducing an immune response against a Group A streptococcus antigen in a subject comprising administering to said subject a lipopeptide comprising a polypeptide conjugated to one or more lipid moieties, wherein:

(i) said polypeptide comprises:

(a) the amino acid sequence of a T helper cell (Th) epitope and the amino acid sequence of a B cell epitope of a Group A streptococcus antigen, and wherein said amino acid sequences are different;

(b) one or more internal lysine residues or internal lysine analog residues for covalent attachment of each of said lipid moieties via an epsilon-amino group of said internal lysine or via a terminal side-chain group of said internal lysine analog; and

(c) each of said one or more lipid moieties is covalently attached directly or indirectly to an epsilon-amino group of said one or more internal lysine residues or to a terminal side-chain group of said one or more internal lysine analog residues; and

(ii) said lipopeptide is administered for a time and under conditions sufficient to elicit a humoral immune response against said antigenic B cell epitope.

86. **(Original)** The method of claim 85 wherein the lipopeptide is administered in combination with a pharmaceutically acceptable excipient or diluent.

87. **(Currently amended)** The method of claim 85 ~~or 86~~ wherein a secondary immune response is generated against the B cell epitope sufficient to prevent the spread of infection by a Group A streptococcus and/or reduce morbidity or mortality in a subject following a subsequent challenge with a Group A streptococcus.

88. **(Currently amended)** The method ~~according to any one of claims 85 to 87~~ of claim 85 wherein the B cell epitope is derived from the amino acid sequence of the M protein of Group A streptococcus.

89. **(Original)** The method of claim 88 wherein the B cell epitope comprises the amino acid sequence set forth in SEQ ID NO: 101.

90. **(Currently amended)** The method ~~according to any one of claims 85 to 89~~ of claim 85 wherein the T-helper epitope comprises an amino acid sequence as set forth in SEQ ID NO: 1 or SEQ ID NO: 24.

91. **(Currently amended)** The method ~~according to any one of claims 85 to 90~~ of claim 85 wherein the lipid moiety comprises Pam_2Cys.

92. **(Currently amended)** The method ~~according to any one of claims 85 to 91~~ of claim 85 further comprising producing the lipopeptide.

93. **(Currently amended)** The method ~~according to any one of claims 85 to 92~~ of claim 85 further comprising determining the antibody level in a sample taken previously from the subject.

94. **(Currently amended)** A vaccine comprising the lipopeptide ~~according to any one of claims 1 to 50~~ of claim 1 wherein the B cell epitope is from the M protein of Group A streptococcus.

95. **(Original)** A vaccine comprising the lipopeptide according to claim 45.

96. **(Original)** Use of the lipopeptide according to claim 45 in the preparation of a contraceptive reagent for reducing fertility in an animal subject.

97. **(Original)** A method of inducing an immune response against a gastrin peptide in a subject comprising administering to said subject a lipopeptide comprising a polypeptide conjugated to one or more lipid moieties, wherein:

(i) said polypeptide comprises:

(a) the amino acid sequence of a T helper cell (Th) epitope and the amino acid sequence of a B cell epitope of a gastrin polypeptide antigen, and wherein said amino acid sequences are different;

(b) one or more internal lysine residues or internal lysine analog residues for covalent attachment of each of said lipid moieties via an epsilon-amino group of said internal lysine or via a terminal side-chain group of said internal lysine analog; and

(c) each of said one or more lipid moieties is covalently attached directly or indirectly to an epsilon-amino group of said one or more internal lysine residues or to a terminal side-chain group of said one or more internal lysine analog residues; and

(ii) said lipopeptide is administered for a time and under conditions sufficient to elicit a humoral immune response against said antigenic B cell epitope.

98. **(Original)** The method of claim 97 wherein the lipopeptide is administered in combination with a pharmaceutically acceptable excipient or diluent.

99. **(Currently amended)** The method of claim 97 ~~or 98~~ wherein a secondary immune response is generated against the B cell epitope sufficient to prevent or block secretion of gastric acid in an animal in need thereof.

100. **(Original)** The method of claim 99 wherein the animal suffers from a condition selected from the group consisting of hypergastrinemia, Zollinger-Ellison syndrome, gastric ulceration, duodenal ulceration and gastrinoma.

101. **(Currently amended)** The method ~~according to any one of claims 97 to 100~~ of claim 97 wherein the B cell epitope is derived from the amino acid sequence of pentagastrin.

102. **(Original)** The method of claim 101 wherein the B cell epitope comprises the amino acid sequence set forth in SEQ ID NO: 102.

103. **(Currently amended)** The method ~~according to any one of claims 97 to 102~~ of claim 97 wherein the T-helper epitope comprises an amino acid sequence as set forth in SEQ ID NO: 24.

104. **(Currently amended)** The method ~~according to any one of claims 97 to 103~~ of claim 97 wherein the lipid moiety comprises Pam_2Cys.

105. **(Currently amended)** The method ~~according to any one of claims 99 to 104~~ of claim 97 further comprising producing the lipopeptide.

106. **(Currently amended)** The method ~~according to any one of claims 97 to 105~~ of claim 97 further comprising determining the antibody level against gastrin in a sample taken previously from the subject.

107. **(Currently amended)** A vaccine comprising the lipopeptide ~~according to any one of claims 1 to 50~~ of claim 1 wherein the B cell epitope is from a gastrin polypeptide.

108. **(Original)** A vaccine comprising the lipopeptide according to claim 46.

109. **(Original)** Use of the lipopeptide according to claim 46 in the preparation of a contraceptive reagent for reducing fertility in an animal subject.

110. **(Currently amended)** The method ~~according to any one of claims 65 to 70~~ of claim 65 wherein the antibody comprises an immunoglobulin selected from the group consisting of . IgM, IgA, and IgG.

111. **(Original)** The method of claim 110 wherein the immunoglobulin is IgM.

112. **(Original)** The method of claim 110 wherein the immunoglobulin is IgA.

113. **(Original)** The method of claim 110 wherein the immunoglobulin is IgG.

114. **(Original)** The method of claim 113 wherein the IgG is selected from the group consisting of IgG1, IgG2a, IgG2b, and IgG3.